

# SEQUENCE LISTING

<110> OHARA, Osamu  
 NAGASE, Takahiro  
 NOMURA, Nobuo  
 HINUMA, Shuji  
 FUJII, Ryo  
 KITAHARA, Osamu  
 MOGI, Shinichi

<120> Novel G Protein Coupled Receptor Protein and Its DNA

<130> 2534 USOP

<140> US 09/744,226

<141> 2001-01-22

<150> PCT/JP99/03909

<151> 1998-07-22

<150> JP 10-207579

<151> 1998-07-23

<150> JP 10-225060

<151> 1998-08-07

<150> JP 10-284328

<151> 1998-10-06

<160> 9

<170> PatentIn version 3.0

<210> 1

<211> 872

<212> PRT

<213> Homo sapiens

<400> 1

Ala Glu Gln Thr Arg Asn His Leu Asn Ala Gly Asp Ile Thr Tyr Ser  
 1 5 10 15

Val Arg Ala Met Asp Gln Leu Val Gly Leu Leu Asp Val Gln Leu Arg  
 20 25 30

Asn Leu Thr Pro Gly Gly Lys Asp Ser Ala Ala Arg Ser Leu Asn Lys  
 35 40 45

Ala Met Val Glu Thr Val Asn Asn Leu Leu Gln Pro Gln Ala Leu Asn  
 50 55 60

Ala Trp Arg Asp Leu Thr Thr Ser Asp Gln Leu Arg Ala Ala Thr Met  
 65 70 75 80

Leu Leu His Thr Val Glu Glu Ser Ala Phe Val Leu Ala Asp Asn Leu  
 85 90 95

Leu Lys Thr Asp Ile Val Arg Glu Asn Thr Asp Asn Ile Lys Leu Glu  
 100 105 110  
 Val Ala Arg Leu Ser Thr Glu Gly Asn Leu Glu Asp Leu Lys Phe Pro  
 115 120 125  
 Glu Asn Met Gly His Gly Ser Thr Ile Gln Leu Ser Ala Asn Thr Leu  
 130 135 140  
 Lys Gln Asn Gly Arg Asn Gly Glu Ile Arg Val Ala Phe Val Leu Tyr  
 145 150 155 160  
 Asn Asn Leu Gly Pro Tyr Leu Ser Thr Glu Asn Ala Ser Met Lys Leu  
 165 170 175  
 Gly Thr Glu Ala Leu Ser Thr Asn His Ser Val Ile Val Asn Ser Pro  
 180 185 190  
 Val Ile Thr Ala Ala Ile Asn Lys Glu Phe Ser Asn Lys Val Tyr Leu  
 195 200 205  
 Ala Asp Pro Val Val Phe Thr Val Lys His Ile Lys Gln Ser Glu Glu  
 210 215 220  
 Asn Phe Asn Pro Asn Cys Ser Phe Trp Ser Tyr Ser Lys Arg Thr Met  
 225 230 235 240  
 Thr Gly Tyr Trp Ser Thr Gln Gly Cys Arg Leu Leu Thr Thr Asn Lys  
 245 250 255  
 Thr His Thr Thr Cys Ser Cys Asn His Leu Thr Asn Phe Ala Val Leu  
 260 265 270  
 Met Ala His Val Glu Val Lys His Ser Asp Ala Val His Asp Leu Leu  
 275 280 285  
 Leu Asp Val Ile Thr Trp Val Gly Ile Leu Leu Ser Leu Val Cys Leu  
 290 295 300  
 Leu Ile Cys Ile Phe Thr Phe Cys Phe Phe Arg Gly Leu Gln Ser Asp  
 305 310 315 320  
 Arg Asn Thr Ile His Lys Asn Leu Cys Ile Ser Leu Phe Val Ala Glu  
 325 330 335  
 Leu Leu Phe Leu Ile Gly Ile Asn Arg Thr Asp Gln Pro Ile Ala Cys  
 340 345 350  
 Ala Val Phe Ala Ala Leu Leu His Phe Phe Phe Leu Ala Ala Phe Thr  
 355 360 365  
 Trp Met Phe Leu Glu Gly Val Gln Leu Tyr Ile Met Leu Val Glu Val  
 370 375 380  
 Phe Glu Ser Glu His Ser Arg Arg Lys Tyr Phe Tyr Leu Val Gly Tyr  
 385 390 395 400

Gly Met Pro Ala Leu Ile Val Ala Val Ser Ala Ala Val Asp Tyr Arg	405	410	415
Ser Tyr Gly Thr Asp Lys Val Cys Trp Leu Arg Leu Asp Thr Tyr Phe	420	425	430
Ile Trp Ser Phe Ile Gly Pro Ala Thr Leu Ile Ile Met Leu Asn Val	435	440	445
Ile Phe Leu Gly Ile Ala Leu Tyr Lys Met Phe His His Thr Ala Ile	450	455	460
Leu Lys Pro Glu Ser Gly Cys Leu Asp Asn Ile Lys Ser Trp Val Ile	465	470	475
Gly Ala Ile Ala Leu Leu Cys Leu Leu Gly Leu Thr Trp Ala Phe Gly	485	490	495
Leu Met Tyr Ile Asn Glu Ser Thr Val Ile Met Ala Tyr Leu Phe Thr	500	505	510
Ile Phe Asn Ser Leu Gln Gly Met Phe Ile Phe Ile Phe His Cys Val	515	520	525
Leu Gln Lys Lys Val Arg Lys Glu Tyr Gly Lys Cys Leu Arg Thr His	530	535	540
Cys Cys Ser Gly Lys Ser Thr Glu Ser Ser Ile Gly Ser Gly Lys Thr	545	550	555
Ser Gly Ser Arg Thr Pro Gly Arg Tyr Ser Thr Gly Ser Gln Ser Arg	565	570	575
Ile Arg Arg Met Trp Asn Asp Thr Val Arg Lys Gln Ser Glu Ser Ser	580	585	590
Phe Ile Thr Gly Asp Ile Asn Ser Ser Ala Ser Leu Asn Arg Glu Gly	595	600	605
Leu Leu Asn Asn Ala Arg Asp Thr Ser Val Met Asp Thr Leu Pro Leu	610	615	620
Asn Gly Asn His Gly Asn Ser Tyr Ser Ile Ala Ser Gly Glu Tyr Leu	625	630	635
Ser Asn Cys Val Gln Ile Ile Asp Arg Gly Tyr Asn His Asn Glu Thr	645	650	655
Ala Leu Glu Lys Lys Ile Leu Lys Glu Leu Thr Ser Asn Tyr Ile Pro	660	665	670
Ser Tyr Leu Asn Asn His Glu Arg Ser Ser Glu Gln Asn Arg Asn Leu	675	680	685
Met Asn Lys Leu Val Asn Asn Leu Gly Ser Gly Arg Glu Asp Asp Ala	690	695	700

Ile Val Leu Asp Asp Ala Thr Ser Phe Asn His Glu Glu Ser Leu Gly  
 705 710 715 720  
 Leu Glu Leu Ile His Glu Glu Ser Asp Ala Pro Leu Leu Pro Pro Arg  
 725 730 735  
 Val Tyr Ser Thr Glu Asn His Gln Pro His His Tyr Thr Arg Arg Arg  
 740 745 750  
 Ile Pro Gln Asp His Ser Glu Ser Phe Phe Pro Leu Leu Thr Asn Glu  
 755 760 765  
 His Thr Glu Asp Leu Gln Ser Pro His Arg Asp Ser Leu Tyr Thr Ser  
 770 775 780  
 Met Pro Thr Leu Ala Gly Val Ala Ala Thr Glu Ser Val Thr Thr Ser  
 785 790 795 800  
 Thr Gln Thr Glu Pro Pro Pro Ala Lys Cys Gly Asp Ala Glu Asp Val  
 805 810 815  
 Tyr Tyr Lys Ser Met Pro Asn Leu Gly Ser Arg Asn His Val His Gln  
 820 825 830  
 Leu His Thr Tyr Tyr Gln Leu Gly Arg Gly Ser Ser Asp Gly Phe Ile  
 835 840 845  
 Val Pro Pro Asn Lys Asp Gly Thr Pro Pro Glu Gly Ser Ser Lys Gly  
 850 855 860  
 Pro Ala His Leu Val Thr Ser Leu  
 865 870

<210> 2  
 <211> 2616  
 <212> DNA  
 <213> Homo sapiens

<400> 2  
 gctgaacaga caagaaatca cttgaatgct ggggacatca cctactctgt ccgggccatg 60  
 gaccagctgg taggcctcct agatgtacag cttcggaact tgaccccagg tggaaaagat 120  
 agtgctgccc ggagtttgaa caaggcaatg gtcgagacag ttaacaacct ccttcagcca 180  
 caagctttga atgcatggag agacctgact acgagtgtac agctgcgtgc ggccaccatg 240  
 ttgcttcata ctgtggagga aagtgtttt gtgctggctg ataacctttt gaagactgac 300  
 attgtcaggg agaatacaga caatattaaa ttggaagttg caagactgag cacagaagga 360  
 aacttagaag acctaaaatt tccagaaaac atgggccatg gaagcactat ccagctgtct 420  
 gcaaatacct taaagcaaaa tggccgaaat ggagagatca gaggggcctt tgtcctgtat 480  
 aacaacttgg gtccttattt atccacggag aatgccagta tgaagttggg aacggaagct 540

ttgtccacaa atcattctgt tattgtcaat tccctgtta ttacggcagc aataaacaaa	600
gagttcagta acaaggttta tttggctgat cctgtggtat ttactgttaa acatatcaag	660
cagtcagagg aaaatttcaa cctaactgt tcattttgga gctactcaa gcgtacaatg	720
acaggttatt ggtcaacaca aggctgtcgg ctctgacaa caaataagac acatactaca	780
tgtctttgta accacctaac aaattttgca gtactgatgg cacatgtgga agttaagcac	840
agtgatgcgg tccatgacct ccttctggat gtgatcacgt gggttggaat tttgctgtcc	900
cttgtttgtc tcttgatttg catcttcaca ttttgctttt tccgcgggct ccagagtgc	960
cgtaacacca tccacaagaa cctctgcac agtctctttg tagcagagct gctcttctg	1020
attgggatca accgaactga ccaaccaatt gcctgtgctg ttttcgctgc cctgttttct	1080
tcttcttggc tgccctcacc tggatgttcc tggagggggg gcagctttat atacatcatg	1140
ctgggtggagg tttttgagag tgaacattca cgtaggaaat acttttatct ggtcggctat	1200
gggatgcctg cactcattgt ggctgtgtca gctgcagtag actacaggag ttatggaaca	1260
gataaagtat gttggctccg acttgacacc tacttcattt ggagttttat aggaccagca	1320
actttgataa ttatgcttaa tgtaatcttc cttgggattg ctttatataa aatgtttcat	1380
catactgcta tactgaaacc tgaatcaggc tgtcttgata acatcaagtc atggggtata	1440
ggtgcaatag ctcttctctg cctattagga ttgacctggg cctttggact catgtatatt	1500
aatgaaagca cagtcatcat ggctatctc ttcaccattt tcaattctct acagggaatg	1560
tttatattta ttttccattg tgtcctacag aagaaggtag gaaaagagta tgggaaatgc	1620
ctgcgaacac attgctgtag tggcaaaagt acagagagtt ccattggttc agggaaaaca	1680
tctggttctc gaactcctgg acgctactcc acaggctcac agagccgaat ccgtagaatg	1740
tggaatgaca cggttcgaaa gcagtcagag tcttccttta ttactggaga cataaacagt	1800
tcagcgtcac tcaacagaga ggggcttctg aacaatgccg gggatacaag tgtcatggat	1860
actctaccac tgaatggtaa ccatggcaat agttacagca ttgccagcgg cgaatacctg	1920
agcaactgtg tgcaaatcat agaccgtggc tataaccata acgagaccgc cctagagaaa	1980
aagattctga aggaactcac ttccaactat atcccttctt acctgaacaa ccatgagcgc	2040
tccagtgaac agaacaggaa tctgatgaac aagctggtga ataaccttg cagtggaagg	2100
gaagatgatg ccattgtcct ggatgatgcc acctcgttta accacgagga gagtttgggc	2160
ctggaactca ttcattgagga atctgatgct cctttgctgc cccaagagt atactccacc	2220

gagaaccacc agccacacca ttataccaga aggcggatcc cccaagacca cagtgagagc 2280  
 tttttccctt tgctaaccaa cgagcacaca gaagatctcc agtcacccca tagagactct 2340  
 ctctatacca gcatgccgac actggctggt gtggccgcca cagagagtgt taccaccagc 2400  
 acccagaccg aacccccacc ggccaaatgt ggtgatgccg aagatgttta ctacaaaagc 2460  
 atgccaaacc taggctccag aaaccacgtc catcagctgc atacttacta ccagctaggt 2520  
 cgcggcagca gtgatggatt tatagttcct ccaaacaaag atgggacccc tcccagagga 2580  
 agttcaaaag gaccggctca tttggtcact agtcta 2616

<210> 3  
 <211> 1021  
 <212> PRT  
 <213> Homo sapiens

<400> 3

Glu	Gly	Ser	Lys	Gly	Thr	Lys	Pro	Pro	Pro	Ala	Val	Ser	Thr	Thr	Lys	1	5	10	15
Ile	Pro	Pro	Ile	Thr	Asn	Ile	Phe	Pro	Leu	Pro	Glu	Arg	Phe	Cys	Glu	20	25	30	
Ala	Leu	Asp	Ser	Lys	Gly	Ile	Lys	Trp	Pro	Gln	Thr	Gln	Arg	Gly	Met	35	40	45	
Met	Val	Glu	Arg	Pro	Cys	Pro	Lys	Gly	Thr	Arg	Gly	Thr	Ala	Ser	Tyr	50	55	60	
Leu	Cys	Met	Ile	Ser	Thr	Gly	Thr	Trp	Asn	Pro	Lys	Gly	Pro	Asp	Leu	65	70	75	80
Ser	Asn	Cys	Thr	Ser	His	Trp	Val	Asn	Gln	Leu	Ala	Gln	Lys	Ile	Arg	85	90	95	
Ser	Gly	Glu	Asn	Ala	Ala	Ser	Leu	Ala	Asn	Glu	Leu	Ala	Lys	His	Thr	100	105	110	
Lys	Gly	Pro	Val	Phe	Ala	Gly	Asp	Val	Ser	Ser	Ser	Val	Arg	Leu	Met	115	120	125	
Glu	Gln	Leu	Val	Asp	Ile	Leu	Asp	Ala	Gln	Leu	Gln	Glu	Leu	Lys	Pro	130	135	140	
Ser	Glu	Lys	Asp	Ser	Ala	Gly	Arg	Ser	Tyr	Asn	Lys	Leu	Gln	Lys	Arg	145	150	155	160
Glu	Lys	Thr	Cys	Arg	Ala	Tyr	Leu	Lys	Ala	Ile	Val	Asp	Thr	Val	Asp	165	170	175	
Asn	Leu	Leu	Arg	Pro	Glu	Ala	Leu	Glu	Ser	Trp	Lys	His	Met	Asn	Ser	180	185	190	

Ser Glu Gln Ala His Thr Ala Thr Met Leu Leu Asp Thr Leu Glu Glu  
 195 200 205  
 Gly Ala Phe Val Leu Ala Asp Asn Leu Leu Glu Pro Thr Arg Val Ser  
 210 215 220  
 Met Pro Thr Glu Asn Ile Val Leu Glu Val Ala Val Leu Ser Thr Glu  
 225 230 235 240  
 Gly Gln Ile Gln Asp Phe Lys Phe Pro Leu Gly Ile Lys Gly Ala Gly  
 245 250 255  
 Ser Ser Ile Gln Leu Ser Ala Asn Thr Val Lys Gln Asn Ser Arg Asn  
 260 265 270  
 Gly Leu Ala Lys Leu Val Phe Ile Ile Tyr Arg Ser Leu Gly Gln Phe  
 275 280 285  
 Leu Ser Thr Glu Asn Ala Thr Ile Lys Leu Gly Ala Asp Phe Ile Gly  
 290 295 300  
 Arg Asn Ser Thr Ile Ala Val Asn Ser His Val Ile Ser Val Ser Ile  
 305 310 315 320  
 Asn Lys Glu Ser Ser Arg Val Tyr Leu Thr Asp Pro Val Leu Phe Thr  
 325 330 335  
 Leu Pro His Ile Asp Pro Asp Asn Tyr Phe Asn Ala Asn Cys Ser Phe  
 340 345 350  
 Trp Asn Tyr Ser Glu Arg Thr Met Met Gly Tyr Trp Ser Thr Gln Gly  
 355 360 365  
 Cys Lys Leu Val Asp Thr Asn Lys Thr Arg Thr Thr Cys Ala Cys Ser  
 370 375 380  
 His Leu Thr Asn Phe Ala Ile Leu Met Ala His Arg Glu Ile Ala Tyr  
 385 390 395 400  
 Lys Asp Gly Val His Glu Leu Leu Leu Thr Val Ile Thr Trp Val Gly  
 405 410 415  
 Ile Val Ile Ser Leu Val Cys Leu Ala Ile Cys Ile Phe Thr Phe Cys  
 420 425 430  
 Phe Phe Arg Gly Leu Gln Ser Asp Arg Asn Thr Ile His Lys Asn Leu  
 435 440 445  
 Cys Ile Asn Leu Phe Ile Ala Glu Phe Ile Phe Leu Ile Gly Ile Asp  
 450 455 460  
 Lys Thr Lys Tyr Ala Ile Ala Cys Pro Ile Phe Ala Gly Leu Leu His  
 465 470 475 480  
 Phe Phe Phe Leu Ala Ala Phe Ala Trp Met Cys Leu Glu Gly Val Gln  
 485 490 495

Leu Tyr Leu Met Leu Val Glu Val Phe Glu Ser Glu Tyr Ser Arg Lys  
 500 505 510  
 Lys Tyr Tyr Tyr Val Ala Gly Tyr Leu Phe Pro Ala Thr Val Val Gly  
 515 520 525  
 Val Ser Ala Ala Ile Asp Tyr Lys Ser Tyr Gly Thr Glu Lys Ala Cys  
 530 535 540  
 Trp Leu His Val Asp Asn Tyr Phe Ile Trp Ser Phe Ile Gly Pro Val  
 545 550 555 560  
 Thr Phe Ile Ile Leu Leu Asn Ile Ile Phe Leu Val Ile Thr Leu Cys  
 565 570 575  
 Lys Met Val Lys His Ser Asn Thr Leu Lys Pro Asp Ser Ser Arg Leu  
 580 585 590  
 Glu Asn Ile Lys Ser Trp Val Leu Gly Ala Phe Ala Leu Leu Cys Leu  
 595 600 605  
 Leu Gly Leu Thr Trp Ser Phe Gly Leu Leu Phe Ile Asn Glu Glu Thr  
 610 615 620  
 Ile Val Met Ala Tyr Leu Phe Thr Ile Phe Asn Ala Phe Gln Gly Val  
 625 630 635 640  
 Phe Ile Phe Ile Phe His Cys Ala Leu Gln Lys Lys Val Arg Lys Glu  
 645 650 655  
 Tyr Gly Lys Cys Phe Arg His Ser Tyr Cys Cys Gly Gly Leu Pro Thr  
 660 665 670  
 Glu Ser Pro His Ser Ser Val Lys Ala Ser Thr Thr Arg Thr Ser Ala  
 675 680 685  
 Arg Tyr Ser Ser Gly Thr Gln Ser Arg Ile Arg Arg Met Trp Asn Asp  
 690 695 700  
 Thr Val Arg Lys Gln Ser Glu Ser Ser Phe Ile Ser Gly Asp Ile Asn  
 705 710 715 720  
 Ser Thr Ser Thr Leu Asn Gln Gly Met Thr Gly Asn Tyr Leu Leu Thr  
 725 730 735  
 Asn Pro Leu Leu Arg Pro His Gly Thr Asn Asn Pro Tyr Asn Thr Leu  
 740 745 750  
 Leu Ala Glu Thr Val Val Cys Asn Ala Pro Ser Ala Pro Val Phe Asn  
 755 760 765  
 Ser Pro Gly His Ser Leu Asn Asn Ala Arg Asp Thr Ser Ala Met Asp  
 770 775 780  
 Thr Leu Pro Leu Asn Gly Asn Phe Asn Asn Ser Tyr Ser Leu His Lys  
 785 790 795 800

Gly Asp Tyr Asn Asp Ser Val Gln Val Val Asp Cys Gly Leu Ser Leu  
 805 810 815  
 Asn Asp Thr Ala Phe Glu Lys Met Ile Ile Ser Glu Leu Val His Asn  
 820 825 830  
 Asn Leu Arg Gly Ser Ser Lys Thr His Asn Leu Glu Leu Thr Leu Pro  
 835 840 845  
 Val Lys Pro Val Ile Gly Gly Ser Ser Ser Glu Asp Asp Ala Ile Val  
 850 855 860  
 Ala Asp Ala Ser Ser Leu Met His Ser Asp Asn Pro Gly Leu Glu Leu  
 865 870 875 880  
 His His Lys Glu Leu Glu Ala Pro Leu Ile Pro Gln Arg Thr His Ser  
 885 890 895  
 Leu Leu Tyr Gln Pro Gln Lys Lys Val Lys Ser Glu Gly Thr Asp Ser  
 900 905 910  
 Tyr Val Ser Gln Leu Thr Ala Glu Ala Glu Asp His Leu Gln Ser Pro  
 915 920 925  
 Asn Arg Asp Ser Leu Tyr Thr Ser Met Pro Asn Leu Arg Asp Ser Pro  
 930 935 940  
 Tyr Pro Glu Ser Ser Pro Asp Met Glu Glu Asp Leu Ser Pro Ser Arg  
 945 950 955 960  
 Arg Ser Glu Asn Glu Asp Ile Tyr Tyr Lys Ser Met Pro Asn Leu Gly  
 965 970 975  
 Ala Gly His Gln Leu Gln Met Cys Tyr Gln Ile Ser Arg Gly Asn Ser  
 980 985 990  
 Asp Gly Tyr Ile Ile Pro Ile Asn Lys Glu Gly Cys Ile Pro Glu Gly  
 995 1000 1005  
 Asp Val Arg Glu Gly Gln Met Gln Leu Val Thr Ser Leu  
 1010 1015 1020

<210> 4

<211> 3063

<212> DNA

<213> Homo sapiens

<400> 4

gaaggaagca aagggacaaa accacctcca gcagtttcta caaccaaatt tccacctata 60

acaaatatatt ttcccctgcc agagagattc tgtgaagcat tagactccaa ggggataaag 120

tggcctcaga cacaaagggg aatgatgggt gaacgaccat gccctaaggg aacaagagga 180

actgcctcat atctctgcat gatttccact ggaacatgga accctaaggg ccccgatctt 240

agcaactgta cctcacactg ggtgaatcag ctggctcaga agatcagaag cggagaaaat 300  
 gctgctagtc ttgccaatga actggctaaa cataccaaag ggccagtgtt tgctggggat 360  
 gtaagttctt cagtgagatt gatggagcag ttggtggaca tccttgatgc acagctgcag 420  
 gaactgaaac ctagtgaaaa agattcagct ggacggagtt ataacaagct ccaaaaacga 480  
 gagaagacat gcagggctta ccttaaggca attgttgaca cagtggacaa ctttctgaga 540  
 cctgaagctt tggaatcatg gaaacatatg aattcttctg aacaagcaca tactgcaaca 600  
 atgttactcg atacattgga agaaggagct tttgtcctag ctgacaatct tttagaacca 660  
 acaagggctt caatgccac agaaaatatt gtccctggaag ttgccgtact cagtacagaa 720  
 ggacagatcc aagactttta atttcctctg ggcatcaaag gagcaggcag ctcaatccaa 780  
 ctgtccgcaa ataccgtcaa acagaacagc aggaatgggc ttgcaaagtt ggtgttcac 840  
 atttaccgga gcctgggaca gttccttagt acagaaaatg caaccattaa actgggtgct 900  
 gattttattg gtcgtaatag caccattgca gtgaactctc acgtcatttc agtttcaatc 960  
 aataaagagt ccagccgagt atacctgact gatcctgtgc tttttaccct gccacacatt 1020  
 gatcctgaca attatttcaa tgcaaactgc tccttctgga actactcaga gagaactatg 1080  
 atgggatatt ggtctacca gggctgcaag ctggttgaca ctaataaaac tcgaacaacg 1140  
 tgtgcatgca gccacctaac caattttgca attctcatgg cccacaggga aattgcatat 1200  
 aaagatggcg ttcattgaatt acttcttaca gtcatcacct ggggtgggaat tgtcatttcc 1260  
 cttgtttgcc tggctatctg catcttcacc ttctgctttt tccgtggcct acagagtgc 1320  
 cgaaatacta ttcacaagaa cctttgtatc aaccttttca ttgctgaatt tattttccta 1380  
 ataggcattg ataagacaaa atatgcgatt gcatgcccaa tatttgcagg acttctacac 1440  
 tttttctttt tggcagcttt tgcttgatg tgccatagaag gtgtgcagct ctacctaattg 1500  
 ttagttgaag tttttgaaag tgaatattca aggaaaaaat attactatgt tgctgggttac 1560  
 ttgtttcctg ccacagtggg tggagtttca gctgctattg actataagag ctatggaaca 1620  
 gaaaaagctt gctggcttca tgttgataac tactttatat ggagcttcat tggacctgtt 1680  
 accttcatta ttctgctaaa tattatcttc ttggtgatca cattgtgcaa aatgggtgaag 1740  
 cattcaaaca ctttgaaacc agattctagc aggttggaac acattaagtc ttgggtgctt 1800  
 ggcgctttcg ctcttctgtg tcttcttggc ctcacctggg cctttggggt gctttttatt 1860  
 aatgaggaga ctattgtgat ggcatactc ttcactatat ttaatgcttt ccagggagtg 1920  
 ttcattttca tctttcactg tgctctccaa aagaaagtac gaaaagaata tggcaagtgc 1980

ttcagacact catactgctg tggaggcctc ccaactgaga gtccccacag ttcagtgaag	2040
gcataacca ccagaaccag tgctcgctat tcctctggca cacagagtcg tataagaaga	2100
atgtggaatg atactgtgag aaaacaatca gaatcttctt ttatctcagg tgacatcaat	2160
agcacttcaa cacttaatca aggaatgact ggcaattacc tactaacaaa ccctcttctt	2220
cgacccccacg gcactaacia cccctataac acattgctcg ctgaaacagt tgtatgtaat	2280
gcccccttcag ctctgtatt taactcacca ggacattcac tgaacaatgc cagggatata	2340
agtgccatgg atactctacc gctaaatggg aattttaaca acagctactc gctgcacaag	2400
ggtgactata atgacagcgt gcaagttgtg gactgtggac taagtctgaa tgatactgct	2460
tttgagaaaa tgatcatttc agaattagtg cacaacaact tacggggcag cagcaagact	2520
cacaacctcg agctcacgt accagtcaaa cctgtgattg gaggtagcag cagtgaagat	2580
gatgctattg tggcagatgc ttcattctta atgcacagcg acaaccacag gctggagctc	2640
catcacaaag aactcgaggc accacttatt cctcagcggg ctcactccct tctgtaccaa	2700
ccccagaaga aagtgaagtc cgaggggaact gacagctatg tctcccaact gacagcagag	2760
gctgaagatc acctacagtc cccaacaga gactctcttt atacaagcat gcccaatctt	2820
agagactctc cctatccgga gagcagccct gacatggaag aagacctctc tccctccagg	2880
aggagtgaga atgaggacat ttactataaa agcatgccaa atcttggagc tggccatcag	2940
cttcagatgt gctaccagat cagcaggggc aatagtgatg gttatataat ccccataac	3000
aaagaagggg gtattccaga aggagatggt agagaaggac aaatgcagct ggttacaagt	3060
ctt	3063

<210> 5  
 <211> 1474  
 <212> PRT  
 <213> Homo sapiens

<400> 5

Met	Ala	Arg	Leu	Ala	Ala	Val	Leu	Trp	Asn	Leu	Cys	Val	Thr	Ala	Val
1			5					10						15	

Leu	Val	Thr	Ser	Ala	Thr	Gln	Gly	Leu	Ser	Arg	Ala	Gly	Leu	Pro	Phe
		20						25					30		

Gly	Leu	Met	Arg	Arg	Glu	Leu	Ala	Cys	Glu	Gly	Tyr	Pro	Ile	Glu	Leu
		35					40					45			

Arg	Cys	Pro	Gly	Ser	Asp	Val	Ile	Met	Val	Glu	Asn	Ala	Asn	Tyr	Gly
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

50					55					60					
Arg	Thr	Asp	Asp	Lys	Ile	Cys	Asp	Ala	Asp	Pro	Phe	Gln	Met	Glu	Asn
65					70					75					80
Val	Gln	Cys	Tyr	Leu	Pro	Asp	Ala	Phe	Lys	Ile	Met	Ser	Gln	Arg	Cys
				85					90					95	
Asn	Asn	Arg	Thr	Gln	Cys	Val	Val	Val	Ala	Gly	Ser	Asp	Ala	Phe	Pro
			100						105				110		
Asp	Pro	Cys	Pro	Gly	Thr	Tyr	Lys	Tyr	Leu	Glu	Val	Gln	Tyr	Asp	Cys
		115					120					125			
Val	Pro	Tyr	Lys	Val	Glu	Gln	Lys	Val	Phe	Val	Cys	Pro	Gly	Thr	Leu
	130					135					140				
Gln	Lys	Val	Leu	Glu	Pro	Thr	Ser	Thr	His	Glu	Ser	Glu	His	Gln	Ser
145					150					155					160
Gly	Ala	Trp	Cys	Lys	Asp	Pro	Leu	Gln	Ala	Gly	Asp	Arg	Ile	Tyr	Val
			165						170					175	
Met	Pro	Trp	Ile	Pro	Tyr	Arg	Thr	Asp	Thr	Leu	Thr	Glu	Tyr	Ala	Ser
			180					185					190		
Trp	Glu	Asp	Tyr	Val	Ala	Ala	Arg	His	Thr	Thr	Thr	Tyr	Arg	Leu	Pro
		195					200					205			
Asn	Arg	Val	Asp	Gly	Thr	Gly	Phe	Val	Val	Tyr	Asp	Gly	Ala	Val	Phe
	210					215					220				
Tyr	Asn	Lys	Glu	Arg	Thr	Arg	Asn	Ile	Val	Lys	Tyr	Asp	Leu	Arg	Thr
225					230					235				240	
Arg	Ile	Lys	Ser	Gly	Glu	Thr	Val	Ile	Asn	Thr	Ala	Asn	Tyr	His	Asp
			245						250				255		
Thr	Ser	Pro	Tyr	Arg	Trp	Gly	Gly	Lys	Thr	Asp	Ile	Asp	Leu	Ala	Val
			260					265					270		
Asp	Glu	Asn	Gly	Leu	Trp	Val	Ile	Tyr	Ala	Thr	Glu	Gly	Asn	Asn	Gly
	275						280					285			
Arg	Leu	Val	Val	Ser	Gln	Leu	Asn	Pro	Tyr	Thr	Leu	Arg	Phe	Glu	Gly
	290					295					300				
Thr	Trp	Glu	Thr	Gly	Tyr	Asp	Lys	Arg	Ser	Ala	Ser	Asn	Ala	Phe	Met
305					310					315					320
Val	Cys	Gly	Val	Leu	Tyr	Val	Leu	Arg	Ser	Val	Tyr	Val	Asp	Asp	Asp
			325						330				335		
Ser	Glu	Ala	Ala	Gly	Asn	Arg	Val	Asp	Tyr	Ala	Phe	Asn	Thr	Asn	Ala
			340					345					350		
Asn	Arg	Glu	Glu	Pro	Val	Ser	Leu	Thr	Phe	Pro	Asn	Pro	Tyr	Gln	Phe

355	360	365
Ile Ser Ser Val Asp Tyr Asn Pro Arg Asp Asn Gln Leu Tyr Val Trp 370 375 380		
Asn Asn Tyr Phe Val Val Arg Tyr Ser Leu Glu Phe Gly Pro Pro Asp 385 390 395 400		
Pro Ser Ala Gly Pro Ala Thr Ser Pro Pro Leu Ser Thr Thr Thr Thr 405 410 415		
Ala Arg Pro Thr Pro Leu Thr Ser Thr Ala Ser Pro Ala Ala Thr Thr 420 425 430		
Pro Leu Arg Arg Ala Pro Leu Thr Thr His Pro Val Gly Ala Ile Asn 435 440 445		
Gln Leu Gly Pro Asp Leu Pro Pro Ala Thr Ala Pro Val Pro Ser Thr 450 455 460		
Arg Arg Pro Pro Ala Pro Asn Leu His Val Ser Pro Glu Leu Phe Cys 465 470 475 480		
Glu Pro Arg Glu Val Arg Arg Val Gln Trp Pro Ala Thr Gln Gln Gly 485 490 495		
Met Leu Val Glu Arg Pro Cys Pro Lys Gly Thr Arg Gly Ile Ala Ser 500 505 510		
Phe Gln Cys Leu Pro Ala Leu Gly Leu Trp Asn Pro Arg Gly Pro Asp 515 520 525		
Leu Ser Asn Cys Thr Ser Pro Trp Val Asn Gln Val Ala Gln Lys Ile 530 535 540		
Lys Ser Gly Glu Asn Ala Ala Asn Ile Ala Ser Glu Leu Ala Arg His 545 550 555 560		
Thr Arg Gly Ser Ile Tyr Ala Gly Asp Val Ser Ser Ser Val Lys Leu 565 570 575		
Met Glu Gln Leu Leu Asp Ile Leu Asp Ala Gln Leu Gln Ala Leu Arg 580 585 590		
Pro Ile Glu Arg Glu Ser Ala Gly Lys Asn Tyr Asn Lys Met His Lys 595 600 605		
Arg Glu Arg Thr Cys Lys Asp Tyr Ile Lys Ala Val Val Glu Thr Val 610 615 620		
Asp Asn Leu Leu Arg Pro Glu Ala Leu Glu Ser Trp Lys Asp Met Asn 625 630 635 640		
Ala Thr Glu Gln Val His Thr Ala Thr Met Leu Leu Asp Val Leu Glu 645 650 655		
Glu Gly Ala Phe Leu Leu Ala Asp Asn Val Arg Glu Pro Ala Arg Phe		

660					665					670					
Leu	Ala	Ala	Lys	Glu	Asn	Val	Val	Leu	Glu	Val	Thr	Val	Leu	Asn	Thr
675					680					685					
Glu	Gly	Gln	Val	Gln	Glu	Leu	Val	Phe	Pro	Gln	Glu	Glu	Tyr	Pro	Arg
690					695					700					
Lys	Asn	Ser	Ile	Gln	Leu	Ser	Ala	Lys	Thr	Ile	Lys	Gln	Asn	Ser	Arg
705					710					715					
Asn	Gly	Val	Val	Lys	Val	Val	Phe	Ile	Leu	Tyr	Asn	Asn	Leu	Gly	Leu
725					730					735					
Phe	Leu	Ser	Thr	Glu	Asn	Ala	Thr	Val	Lys	Leu	Ala	Gly	Glu	Ala	Gly
740					745					750					
Pro	Gly	Gly	Pro	Gly	Gly	Ala	Ser	Leu	Val	Val	Asn	Ser	Gln	Val	Ile
755					760					765					
Ala	Ala	Ser	Ile	Asn	Lys	Glu	Ser	Ser	Arg	Val	Phe	Leu	Met	Asp	Pro
770					775					780					
Val	Ile	Phe	Thr	Val	Ala	His	Leu	Glu	Asp	Lys	Asn	His	Phe	Asn	Ala
785					790					795					
Asn	Cys	Ser	Phe	Trp	Asn	Tyr	Ser	Glu	Arg	Ser	Met	Leu	Gly	Tyr	Trp
805					810					815					
Ser	Thr	Gln	Gly	Cys	Arg	Leu	Val	Glu	Ser	Asn	Lys	Thr	His	Thr	Thr
820					825					830					
Cys	Ala	Cys	Ser	His	Leu	Thr	Asn	Phe	Ala	Val	Leu	Met	Ala	His	Arg
835					840					845					
Glu	Ile	Tyr	Gln	Gly	Arg	Ile	Asn	Glu	Leu	Leu	Leu	Ser	Val	Ile	Thr
850					855					860					
Trp	Val	Gly	Ile	Val	Ile	Ser	Leu	Val	Cys	Leu	Ala	Ile	Cys	Ile	Ser
865					870					875					
Thr	Phe	Cys	Phe	Leu	Arg	Gly	Leu	Gln	Thr	Asp	Arg	Asn	Thr	Ile	His
885					890					895					
Lys	Asn	Leu	Cys	Ile	Asn	Leu	Phe	Leu	Ala	Glu	Leu	Leu	Phe	Leu	Val
900					905					910					
Gly	Ile	Asp	Lys	Thr	Gln	Tyr	Glu	Ile	Ala	Cys	Pro	Ile	Phe	Ala	Gly
915					920					925					
Leu	Leu	His	Tyr	Phe	Phe	Leu	Ala	Ala	Phe	Ser	Trp	Leu	Cys	Leu	Glu
930					935					940					
Gly	Val	His	Leu	Tyr	Leu	Leu	Leu	Val	Glu	Val	Phe	Glu	Ser	Glu	Tyr
945					950					955					
Ser	Arg	Thr	Lys	Tyr	Tyr	Tyr	Leu	Gly	Gly	Tyr	Cys	Phe	Pro	Ala	Leu



1250	1255	1260
Gly Gly Pro Glu Pro Pro Arg	Gly Arg Asn Leu Ala	Asp Ala Ala
1265	1270	1275
Ala Phe Glu Lys Met Ile Ile	Ser Glu Leu Val His	Asn Asn Leu
1280	1285	1290
Arg Gly Ser Ser Ser Ala Ala	Lys Gly Pro Pro Pro	Pro Glu Pro
1295	1300	1305
Pro Val Pro Pro Val Pro Gly	Gly Gly Gly Glu Glu	Glu Ala Gly
1310	1315	1320
Gly Pro Gly Gly Ala Asp Arg	Ala Glu Ile Glu Leu	Leu Tyr Lys
1325	1330	1335
Ala Leu Glu Glu Pro Leu Leu	Leu Pro Arg Ala Gln	Ser Val Leu
1340	1345	1350
Tyr Gln Ser Asp Leu Asp Glu	Ser Glu Ser Cys Thr	Ala Glu Asp
1355	1360	1365
Gly Ala Thr Ser Arg Pro Leu	Ser Ser Pro Pro Gly	Arg Asp Ser
1370	1375	1380
Leu Tyr Ala Ser Gly Ala Asn	Leu Arg Asp Ser Pro	Ser Tyr Pro
1385	1390	1395
Asp Ser Ser Pro Glu Gly Pro	Ser Glu Ala Leu Pro	Pro Pro Pro
1400	1405	1410
Pro Ala Pro Pro Gly Pro Pro	Glu Ile Tyr Tyr Thr	Ser Arg Pro
1415	1420	1425
Pro Ala Leu Val Ala Arg Asn	Pro Leu Gln Gly Tyr	Tyr Gln Val
1430	1435	1440
Arg Arg Pro Ser His Glu Gly	Tyr Leu Ala Ala Pro	Gly Leu Glu
1445	1450	1455
Gly Pro Gly Pro Asp Gly Asp	Gly Gln Met Gln Leu	Val Thr Ser
1460	1465	1470

Leu

<210> 6

<211> 4422

<212> DNA

<213> Homo sapiens

<400> 6

atggcccgcc tagccgcagt gctctggaat ctgtgtgtca ccgccgtcct ggtcacctcg 60

gccaccaag gcctgagccg ggccgggctc ccgttcgggc tgatgcgccg ggagctggcg 120

tgtgaaggct	accccatcga	gctgcggtgc	cccggcagcg	acgtcatcat	ggtggagaat	180
gccaaactacg	ggcgcacgga	cgacaagatt	tgcgatgctg	accctttcca	gatggagaat	240
gtgcagtgct	acctgccgga	cgccttcaag	atcatgtcac	agaggtgtaa	caaccgcacc	300
cagtgcgtgg	tggtcgccgg	ctcgatgcc	tttctgacc	cctgtcctgg	gacctacaag	360
tacctggagg	tgcagtacga	ctgtgtcccc	tacaaagtgg	agcagaaagt	cttcgtgtgc	420
ccagggaccc	tgcagaaggt	gctggagccc	acctcgacac	acgagtcaga	gcaccagtct	480
ggcgcatggt	gcaaggaccc	gctgcaggcg	ggtgaccgca	tctacgtgat	gccctggatc	540
ccctaccgca	cggacacact	gactgagtat	gcctcgtggg	aggactacgt	ggccgcccgc	600
cacaccacca	cctaccgct	gcccacccgc	gtggatggca	caggctttgt	ggtctacgat	660
ggtgccgtct	tctacaacaa	ggagcgcacg	cgcaacatcg	tcaagtatga	cctacggacg	720
cgcatacaga	gcggggagac	ggtcatcaat	accgccact	accatgacac	ctcgccctac	780
cgtggggcg	gaaagaccga	cattgacctg	gcggtggacg	agaacgggct	gtgggtcatc	840
taogccactg	agggcaacaa	cgggcggtcg	gtggtgagcc	agctgaaccc	ctacacactg	900
cgttttgagg	gcacgtggga	gacgggttac	gacaagcgct	cggcatccaa	cgccttcattg	960
gtgtgtgggg	tcctgtacgt	cctgcgtcc	gtgtacgtgg	atgatgacag	cgaggcggt	1020
ggcaaccgcg	tggactatgc	cttcaacacc	aatgccaac	gcgaggagcc	tgtcagcctc	1080
accttcccca	accttacca	gttcattctc	tcgttgact	acaaccctcg	cgacaaccag	1140
ctgtacgtct	ggaacaacta	tttcgtggtg	cgtacagcc	tggagttcgg	gccgcccagc	1200
cccagtgtg	gccagccac	ttccccacc	ctcagcacga	ccaccacagc	caggcccacg	1260
ccctcacca	gcacagcctc	gcccgcagcc	accacccgc	tcgcgcgggc	accttcacc	1320
acgcaccag	tgggtgccat	caaccagctg	ggacctgatc	tgctccagc	cacagcccca	1380
gtccccagca	cccgcgggc	cccagccccg	aatctacacg	tgtccctga	gctcttctgc	1440
gagccccgag	aggtacggcg	ggtccagtgg	ccggccaccc	agcagggcat	gctggtggag	1500
aggccctgcc	ccaaggggac	tcgaggaatt	gcctccttc	agtgtctacc	agccttgggg	1560
ctctggaacc	ccgggggccc	tgacctcagc	aactgcacct	ccccctgggt	caaccaggtg	1620
gccagaaga	tcaagagtgg	ggagaacgcg	gccaacatcg	ccagcgagct	ggcccgacac	1680
accgggggt	ccatctacgc	gggggacgtc	tcctcctctg	tgaagctgat	ggagcagctg	1740
ctggacatcc	tggatgccc	gctgcaggcc	ctgcggccca	tcgagcgca	gtcagccggc	1800
aagaactaca	acaagatgca	caagcgagag	agaacttgta	aggattatat	caaggccgtg	1860

gtggagacag tggacaatct gctccggcca gaagctctgg agtcctggaa ggacatgaat	1920
gccacggagc aggtgcacac ggccaccatg ctctctgacg tcttggagga gggcgcttc	1980
ctgttggcgg acaatgtcag ggagcctgcc cgcttctctg ctgccaagga gaacgtggtc	2040
ctggaggtca cagtctgaa cacagagggc caggtgcagg agctggtgtt cccccaggag	2100
gagtaccgga gaaagaactc catccagctg tctgccaaaa ccatcaagca gaacagccgc	2160
aatggggtgg tcaaagttgt cttcctctc tacaacaacc tgggcctctt cctgtccacg	2220
gagaatgcca cagtgaagct ggccggcgaa gcaggcccg gtggccctgg gggcgctct	2280
ctagtgggtga actcacaggc catcgagca tccatcaaca aggagtccag ccgctcttc	2340
ctcatggacc ctgtcatctt caccgtggcc cactggagg acaagaacca cttcaatgt	2400
aactgtctct tctggaacta ctggagcgt tccatgctgg gctattggtc gacccaaggc	2460
tggcgctgg tggagtccaa caagacccat accacgtgtg cctgcagcca cctcaccaac	2520
ttcgtgtgc tcatggctca ccgtgagatc taccagggcc gcatcaacga gctgctgtg	2580
tcggctcatc cctgggtggg cattgtgatc tccctggtct gcttggccat ctgcatctcc	2640
accttctgt tcttggggg gctgcagacc gaccgcaaca ccatccacaa gaacctgtgc	2700
atcaacctct tcttggctga gctgctcttc ctggctggga tcgacaagac tcagtatgag	2760
attgctgcc ccatcttgc cggtctgtg cactatttct tcttggctgc cttctctgg	2820
ctgtgctgg agggcgtgca cctctacctg ctactagtgg aggtgtttga gagcgagtat	2880
tcccgacca agtactacta cctgggtggc tactgtctcc cggccctggt ggtgggcatc	2940
gcggctgcca ttgactaccg cagctacggc accgagaagg cctgctggct ccgagtggac	3000
aattacttca tctggagttt catcgggcca gtctctctcg ttatcgtggt caacctggtg	3060
ttctcatgg tgacctgca caagatgatc cgaagctcat ctgtgctcaa gcccactcc	3120
agccgctgg acaacattaa atcctggcg ctgggggcca tcgcgtgct gtctctgtg	3180
ggcctcacct gggctttcgg cctctcttc atcaacaagg agtcggtggt catggcctat	3240
ctcttcacca cttcaacgc cttccagggg gtcttcatct tcgtctttca ctgcgctta	3300
cagaagaagg tgcacaagga gtacagcaag tgctgcgtc actcctactg ctgcatccgc	3360
tccccaccg ggggactca cggatccctc aagacctcag ccatgcgaag caacaccgc	3420
tactacacag ggacctagag ccgaattcgg aggatgtgga atgacactgt gaggaacag	3480
acggagtct ccttcatggc gggtgacatc aacagcacc ccacctgaa ccgaggtacc	3540

atggggaacc	acctgctgac	caaccccgctg	ctgcagcccc	gtgggggcac	cagtcacctac	3600
aacacctca	tgcgcgagtc	agtgggcttc	aatccctcct	cgccccctgt	cttcaactcc	3660
ccagggagct	accgggaacc	caagcacccc	ttgggaggcc	gggaagcctg	tggcatggac	3720
accctgcccc	tgaacggcaa	cttcaataac	agttactcct	tgcgaagtgg	ggatttcctt	3780
cccggggatg	ggggccctga	gccgccccga	ggccggaacc	tagccgatgc	ggcggccttt	3840
gagaagatga	tcattctcaga	gctggtgcac	aacaacctgc	gggggagcag	cagcgcggcc	3900
aagggccctc	caccgcctga	gccccctgtg	ccacctgtgc	cagggggcgg	gggcgaggaa	3960
gaggcgggcg	ggcccggggg	tgtgaccgg	gccgagattg	aacttctcta	taaggccctg	4020
gaggagcctc	tgtgtgtgcc	ccgggcccag	tcggtgtgtg	accagagcga	tctggacgag	4080
tgcgagagct	gcacggccga	ggacggcgcc	accagccggc	ccctctcttc	ccctcctggc	4140
cgggactccc	tctatgccag	cggggccaac	ctgcgggact	cacctctcta	cccggacagc	4200
agccctgagg	ggcccagtga	ggccctgccc	ccaccccttc	ccgcaccccc	cggccccccc	4260
gaaatctact	acacctcgcg	cccgccagcc	ctggtggccc	ggaatccctt	gcagggttac	4320
taccaggtgc	ggcgtcctag	ccacgagggc	tacctggcag	cccaggcctt	tgaggggcca	4380
gggcccgatg	gggacgggca	gatgcagctg	gtcaccagtc	tc		4422

<210> 7  
 <211> 3000  
 <212> DNA  
 <213> Homo sapiens  
  
 <220>  
 <221> misc\_feature  
 <222> (1)..(3000)  
 <223> Sequence depicted in Figs 1 and 2 inclusive, containing protein encoding sequence of seq id two

<400> 7	
gctgaacaga	caagaaatca cttgaatgct ggggacatca cctactctgt ccggggccatg 60
gaccagctgg	taggcctcct agatgtacag cttcggaact tgaccccagg tggaaaagat 120
agtgtgtccc	ggagtttgaa caaggcaatg gtcgagacag ttaacaacct ccttcagcca 180
caagctttga	atgcatggag agacctgact acgagtgtac agctgcgtgc ggccaccatg 240
ttgtttcata	ctgtggagga aagtgttttt gtgctggctg ataacctttt gaagactgac 300
attgtcaggg	agaatacaga caatattaaa ttggaagttg caagactgag cacagaagga 360
aacttagaag	acctaaaatt tccagaaaac atggggccatg gaagcactat ccagctgtct 420

gcaaataacct taaagcaaaa tggccgaaat ggagagatca gagtggcctt tgtcctgtat	480
aacaacttgg gtccttattt atccaaggag aatgccagta tgaagttggg aacggaagct	540
ttgtccacaa atcattctgt tattgtcaat tccctgtta ttacggcagc aataaacaaa	600
gagttcagta acaaggttta tttggctgat cctgtggtat ttactgttaa acatatcaag	660
cagtcagagg aaaatttcaa ccctaactgt tcattttgga gctactccaa gcgtacaatg	720
acaggttatt ggtcaacaca aggctgtcgg ctcttgacaa caaataagac acatactaca	780
tgtctttgta accacctaac aaattttgca gtactgatgg cacatgtgga agttaagcac	840
agtgatgcgg tccatgacct ccttctggat gtgatcacgt gggttggaat tttgctgtcc	900
cttgtttgtc tcttgatttg catcttcaca ttttgccttt tccgcgggct ccagagtgc	960
cgtaacacca tccacaagaa cctctgcac agtctctttg tagcagagct gctcttctctg	1020
attgggatca accgaactga ccaaccaatt gcctgtgctg ttttcgctgc cctgttttct	1080
tcttcttggc tgccttcacc tggatgttcc tggagggggg gcagctttat atacatcatg	1140
ctggtggagg tttttgagag tgaacattca cgtaggaaat acttttatct ggtcggctat	1200
gggatgcctg cactcattgt ggctgtgtca gctgcagtag actacaggag ttatggaaca	1260
gataaagtat gttggctccg acttgacacc tacttcattt ggagttttat aggaccagca	1320
actttgataa ttatgcttaa tgtaatcttc cttgggattg ctttatataa aatgtttcat	1380
catactgcta tactgaaacc tgaatcaggc tgtcttgata acatcaagtc atgggttata	1440
ggtgcaatag ctcttctctg cctattagga ttgacctggg cctttggact catgtatatt	1500
aatgaaagca cagtcatcat ggctatctc ttcaccattt tcaattctct acagggaatg	1560
tttatattta ttttccattg tgtcctacag aagaaggtag gaaaagagta tgggaaatgc	1620
ctgcgaacac attgctgtag tggcaaaagt acagagagtt ccattgggtc agggaaaaca	1680
tctggttctc gaactcctgg acgctactcc acaggetcac agagccgaat ccgtagaatg	1740
tggaatgaca cggttcgaaa gcagtcagag tcttctctta ttactggaga cataaacagt	1800
tcagcgtcac tcaacagaga ggggcttctg aacaatgcca gggatacaag tgtcatggat	1860
actctaccac tgaatggtaa ccatggcaat agttacagca ttgccagcgg cgaataacctg	1920
agcaactgtg tgcaaatcat agaccgtggc tataaccata acgagaccgc cctagagaaa	1980
aagattctga aggaactcac ttccaactat atcccttctt acctgaacaa ccatgagcgc	2040
tccagtgaac agaacaggaa tctgatgaac aagctgggtga ataaccttg cagtggaagg	2100

gaagatgatg ccattgtcct ggatgatgcc acctcgttta accacgagga gagtttgggc	2160
ctggaactca ttcatgagga atctgatgct cctttgctgc cccaagagt atactccacc	2220
gagaaccacc agccacacca ttataccaga aggcggatcc cccaagacca cagtgagagc	2280
tttttccctt tgctaaccaa cgagcacaca gaagatctcc agtcacccca tagagactct	2340
ctctatacca gcatgccgac actggctggt gtggccgcca cagagagtgt taccaccagc	2400
accagaccg aacccccacc ggccaaatgt ggtgatgccg aagatgttta ctacaaaagc	2460
atgccaaacc taggctccag aaaccacgtc catcagctgc atacttacta ccagctaggt	2520
cgcggcagca gtgatggatt tatagttcct ccaaacaaag atgggacccc tcccgaggga	2580
agttcaaaag gaccggctca tttggctact agtctataga agatgacaca gaaattggaa	2640
ccaacaaaac tgctaacacc ttgttgactg ttctgagttg atataagcag tggtaataat	2700
gtgtgtactc ctaaatcttt atgctgtcct ctaaagacaa acacaaactc tcagactttt	2760
ttttttttta atgggatttt taggtcagcc caggggagaa agataactgc taaaattccc	2820
ctgtacccca tcctttcttg tcctttcccc ttcagatgga gacttcatta tgttaatgaa	2880
caagatatga agaaaatggc actcattgtg gccttgttga attatgttgt gtatgtttta	2940
acatctctga tgctgtgtta ctaaaattac aaggacctgc tttttaaaag gccagaacaa	3000

<210> 8

<211> 4343

<212> DNA

<213> Homo sapiens

<220>

<221> misc\_feature

<222> (1)..(4343)

<223> Sequence depicted in Figs 7-15 inclusive, containing protein encoding sequence of seq id four

<400> 8

gaaggaagca aagggaacaa accacotcca gcagtttcta caaccaaaat tccacctata	60
acaaatatatt ttccctgcc agagagattc tgtgaagcat tagactccaa ggggataaag	120
tggcctcaga cacaaagggg aatgatgggt gaacgaccat gccctaaggg aacaagagga	180
actgcctcat atctctgcat gatttccact ggaacatgga accctaaggg ccccgatctt	240
agcaactgta cctcacactg ggtgaatcag ctggctcaga agatcagaag cggagaaaat	300
gctgctagtc ttgccaatga actggctaaa cataccaaag ggccagtgtt tgctggggat	360
gtaagttctt cagtgagatt gatggagcag ttggtggaca tccttgatgc acagctgcag	420

gaactgaaac ctagtgaaaa agattcagct ggacggagtt ataacaagct ccaaaaacga	480
gagaagacat gcagggctta ccttaaggca attgttgaca cagtggacaa ccttctgaga	540
cctgaagctt tggaatcatg gaaacatatg aattcttctg aacaagcaca tactgcaaca	600
atgttactcg atacattgga agaaggagct tttgtcctag ctgacaatct tttagaacca	660
acaagggctt caatgccac agaaaatatt gtccctggaag ttgccgtact cagtacagaa	720
ggacagatcc aagactttta atttcctctg ggcatcaaag gagcaggcag ctcaatccaa	780
ctgtccgcaa ataccgtcaa acagaacagc aggaatgggc ttgcaaagtt ggtgttcac	840
atttaccgga gcctgggaca gttccttagt acagaaaatg caaccattaa actgggtgct	900
gattttattg gtcgtaatag caccattgca gtgaactctc acgtcatttc agtttcaatc	960
aataaagagt ccagccgagt atacctgact gatcctgtgc tttttaccct gccacacatt	1020
gatcctgaca attatttcaa tgcaaactgc tccttctgga actactcaga gagaactatg	1080
atgggatatt ggtctacca gggctgcaag ctgggtgaca ctaataaaac tcgaacaacg	1140
tgtgcatgca gccacctaac caattttgca attctcatgg cccacaggga aattgcatat	1200
aaagatggcg ttcatgaatt acttcttaca gtcatcacct gggtgggaaat tgtcatttcc	1260
cttgtttgcc tggctatctg catcttcacc ttctgctttt tccgtggcct acagagtgac	1320
cgaaatacta ttcacaagaa cttttgtatc aaccttttca ttgctgaatt tattttccta	1380
ataggcattg ataagacaaa atatgcgatt gcatgcccaa tatttgcagg acttctacac	1440
tttttctttt tggcagcttt tgcttgatg tgcctagaag gtgtgcagct ctacctaatz	1500
ttagttgaag tttttgaaag tgaatattca aggaaaaaat attactatgt tgctggttac	1560
ttgtttcctg ccacagtggg tggagtttca gctgctattg actataagag ctatggaaca	1620
gaaaaagctt gctggcttca tgttgataac tactttatat ggagcttcat tggacctggt	1680
accttcatta ttctgctaaa tattatcttc ttggtgatca cattgtgcaa aatgggtgaag	1740
cattcaaaca ctttgaaacc agattctagc aggttggaac acattaagtc ttgggtgctt	1800
ggcgctttcg ctcttctgtg tcttcttggc ctcacctggg cctttgggtt gctttttatt	1860
aatgaggaga ctattgtgat ggcatatctc ttactatat ttaatgcttt ccagggagtg	1920
ttcattttca tctttcactg tgctctccaa aagaaagtac gaaaagaata tggcaagtgc	1980
ttcagacact catactgctg tggaggcctc ccaactgaga gtccccacag ttcagtgaag	2040
gcatcaacca ccagaaccag tgctcgctat tcctctggca cacagagtcg tataagaaga	2100

atgtggaatg atactgtgag aaaacaatca gaatcttctt ttatctcagg tgacatcaat	2160
agcacttcaa cacttaatca aggaatgact ggcaattacc tactaacaaa ccctcttctt	2220
cgacccacag gcaactaaca ccctataac acattgctcg ctgaaacagt tgtatgtaat	2280
gccccttcag ctctgtatt taactcacca ggacattcac tgaacaatgc cagggataca	2340
agtgccatgg atactctacc gctaaatggg aattttaaca acagctactc gctgcacaag	2400
ggtgactata atgacagcgt gcaagttgtg gactgtggac taagtctgaa tgatactgct	2460
tttgagaaaa tgatcatttc agaattagtg cacaacaact tacggggcag cagcaagact	2520
cacaacctcg agctcacgct accagtcaaa cctgtgattg gaggtagcag cagtgaagat	2580
gatgctattg tggcagatgc ttcatcttta atgcacagcg acaaccacag gctggagctc	2640
catcacaaag aactcgaggc accacttatt cctcagcgga ctactccct tctgtaccaa	2700
ccccagaaga aagtgaagtc cgagggaact gacagctatg tctcccaact gacagcagag	2760
gctgaagatc acctacagtc cccaacaga gactctcttt atacaagcat gcccaatctt	2820
agagactctc cctatccgga gagcagccct gacatggaag aagacctctc tccctccagg	2880
aggagtgaga atgaggacat ttactataaa agcatgccaa atcttggagc tggccatcag	2940
cttcagatgt gctaccagat cagcaggggc aatagtgatg gttatataat ccccataac	3000
aaagaagggg gtattccaga aggagatggt agagaaggac aaatgcagct gggtacaagt	3060
ctttaatcat acagctaagg aattccaagg gccacatgag agtattaata aataaagaca	3120
ccattggcct gacgcagctc cctcaaactc tgcttgaaga gatgactctt gacctgtggt	3180
tctctggtgt aaaaaagatg actgaacctt gcagttctgt gaatttttat aaaacataca	3240
aaaactttgt atatacacag agtatactaa agtgaattat ttgttacaaa gaaaagagat	3300
gccagccagg tattttaaga ttctgctgct gtttagagaa attgtgaaac aagcaaaaca	3360
aaactttcca gccattttac tgcagcagtc tgtgaactaa atttgtaaat atggctgcac	3420
catttttgta ggctgcatt gtattatata caagacgtag gctttaaaat cctgtgggac	3480
aaatttactg taccttacta ttctgacaa gacttgaaa agcaggagag atattctgca	3540
tcagtttgca gttcactgca aatcttttac attaaggcaa agattgaaaa catgcttaac	3600
cactagcaat caagccacag gccttatttc atatgtttcc tcaactgtac aatgaactat	3660
tctcatgaaa aatggctaaa gaaattatat tttgttctat tgctagggta aaataaatac	3720
atgtgtgtcc aactgaaata taattgtcat taaaataatt ttaaagagtg aagaaaatat	3780
tgtgaaaagc tcttggttgc acatgttatg aaatgttttt tottacactt tgtcatggta	3840

agttctactc attttcactt cttttccact gtatacagtg ttctgctttg acaaagttag 3900  
 tctttattac ttacatttaa atttcttatt gccaaaagaa cgtgttttat ggggagaaac 3960  
 aaactctttg aagccagtta tgtcatgcct tgcacaaaag tgatgaaatc tagaaaagat 4020  
 tgtgtgtcac ccctgtttat tcttgaacag agggcaaaga gggcactggg cacttctcac 4080  
 aaactttcta gtgaacaaaa ggtgcctatt cttttttaaa aaaataaaat aaaacataaa 4140  
 tattactctt ccatattcct tctgcctata tttagtaatt aatttatttt atgataaagt 4200  
 tctaataaaa tgtaaattgt ttcagcaaaa ttctgctttt tttcatccc tttgtgtaaa 4260  
 cctgttaata atgagcccat cactaatatc cagtgtaaag tttaacacgg tttgacagta 4320  
 aataaatgtg aattttttca agt 4343

<210> 9  
 <211> 5659  
 <212> DNA  
 <213> Homo sapiens  
  
 <220>  
 <221> misc\_feature  
 <222> (1)..(5659)  
 <223> Sequence depicted in Figs 21-24 inclusive, containing protein encoding sequence of seq id six

<400> 9  
 tttttttttt tttttttcct aatttttggg cggcgggcggg gctggggccag ggggaagggaag 60  
 ggacacggag gccgcctcgc tcccgccacc tectaccgcg tccccccag ccccggtccc 120  
 gggagatgtg cggggcgggg ggcccgggtt cgccgagccg caggagagac acgctgggccc 180  
 gaccccagag aggcgctgga caggctggtg gtccaggccg tggtgccctgc caggtgatgt 240  
 ggggcaaagc cccccgcaca ggccactgag agctccggac acgcacccgg ctgccaccat 300  
 ggcccgcta gccgcagtgc tctggaatct gtgtgtcacc gccgtcctgg tcacctcggc 360  
 caccacaggc ctgagccggg ccgggctccc gttcgggctg atgcgccggg agctggcggtg 420  
 tgaaggctac cccatcgagc tgcggtgccc cggcagcgac gtcacatggg tggagaatgc 480  
 caactacggg cgcacggacg acaagatttg cgatgctgac cttttccaga tggagaatgt 540  
 gcagtgtac ctgccggacg ctttcaagat catgtcacag aggtgtaaca accgcaccca 600  
 gtgcgtggtg gtcgccggct cggatgcctt tctgacccc tgtcctggga cctacaagta 660  
 cctggaggtg cagtacgact gtgtccccta caaagtggag cagaaagtct tcgtgtgccc 720

agggaccctg cagaaggtgc tggagcccac ctcgacacac gagtcagagc accagtctgg	780
cgcattggtgc aaggaccgcg tgcaggcggg tgaccgcac tacgtgatgc cctggatccc	840
ctaccgcacg gacacactga ctgagtatgc ctcgtgggag gactacgtgg ccgcccgcga	900
caccaccacc taccgcctgc ccaaccgcgt ggatggcaca ggctttgtgg tctacgatgg	960
tgccgtcttc tacaacaagg agcgcacgcg caacatcgtc aagtatgacc tacggacgcg	1020
catcaagagc ggggagacgg tcatcaatac cgccaactac catgacacct cgccctaccg	1080
ctggggcgga aagaccgaca ttgacctggc ggtggacgag aacgggctgt gggtcattcta	1140
cgccactgag ggcaacaacg ggcggctggg ggtgagccag ctgaaccctt acacactgcg	1200
ctttgagggc acgtgggaga cgggttacga caagcgctcg gcatccaacg ccttcattgg	1260
gtgtggggtc ctgtacgtcc tgcgtccgt gtacgtggat gatgacagcg aggcggctgg	1320
caaccgcgtg gactatgcct tcaacaccaa tgccaaccgc gaggagcctg tcagcctcac	1380
cttccccaac cctaccagt tcatctctc cgttgactac aaccctcgcg acaaccagct	1440
gtacgtctgg aacaactatt tcgtggtgcg ctacagcctg gagttcgggc cgcccgaccc	1500
cagtgtctgg ccagccactt cccacccct cagcacgacc accacagcca ggcccacgcc	1560
cctcaccagc acagcctcgc ccgcagccac caccocgctc cgccgggcac cctcaccac	1620
gcaccagtg ggtgccatca accagctggg acctgatctg cctccagcca cagccccagt	1680
ccccagcacc cggcgggccc cagccccgaa tctacacgtg tcccctgagc tcttctgcga	1740
gccccgagag gtacggcggg tccagtggcc ggccaccag cagggcatgc tgggtggagag	1800
gcctgcccc aaggggactc gaggaattgc ctcttccag tgtctaccag ccttggggct	1860
ctggaacccc cggggccctg acctcagcaa ctgcacctcc cctgggtca accaggtggc	1920
ccagaagatc aagagtgggg agaacgcggc caacatcgcc agcgagctgg cccgacacac	1980
ccggggctcc atctacgcg gggacgtctc ctctctgtg aagctgatgg agcagctgct	2040
ggacatcctg gatgccacg tgcaggccct gcggcccatc gagcgcgagt cagccggcaa	2100
gaactacaac aagatgcaca agcgagagag aacttgtaag gattatatca aggcctggg	2160
ggagacagtg gacaatctgc tccggccaga agctctggag tctggaagg acatgaatgc	2220
cacggagcag gtgcacacgg ccaccatgct cctcgacgtc ctggaggagg gcgccttct	2280
gctggccgac aatgtcaggg agcctgccc cttctgggt gccaaaggaga acgtggctct	2340
ggaggtcaca gtctgaaca cagagggcca ggtgcaggag ctggtgttcc ccaggagga	2400
gtacccgaga aagaactcca tccagctgtc tgccaaaacc atcaagcaga acagccgcaa	2460

tggggtgggc aaagtgtgtc tcatcctcta caacaacctg ggccctcttc tgtccacgga	2520
gaatgccaca gtgaagctgg ccggcgaagc aggcccggtt ggccctgggg gcgcctctct	2580
agtggatgaac tcacaggtca tcgcagcatc catcaacaag gaggccagcc gcgtcttctt	2640
catggacctt gtcattctca ccgtggccca cctggaggac aagaaccact tcaatgctaa	2700
ctgtctcttc tggaactact cggagcgttc catgtctggc tattggctga cccaaggctg	2760
ccgcctgggtg gaggccaaca agaccatac cacgtgtgcc tgcagccacc tcaccaactt	2820
cgctgtgttc atggctcacc gtgagatcta ccagggcgcg atcaacgagc tgctgtgttc	2880
ggctcatcacc tgggtgggca ttgtgatctc cctgggtctgc ttggccatct gcatctccac	2940
cttctgtctc ctgcgggggc tgcagaccga ccgcaacacc atccacaaga acctgtgcat	3000
caacctcttc ctggctgagc tgcctcttct ggctgggcat gacaagactc agtatgagat	3060
tgcctgcccc atcttcgcgc gcctgtgtga ctatttcttc ctggctgctt tctctgtgtt	3120
gtgcctggag ggctgtgacc tctacctgt actagtggag gtgtttgaga gcgagtattc	3180
ccgcaccaag tactactacc tgggtggcta ctgttctcc ggccctgggtg tgggcatcgc	3240
ggctgccatt gactaccgca gctacggcac cgagaaggcc tgctggctcc gaggggacaa	3300
ttacttcata tggagtttca tcggggcagc ctctctctgt atcgtgggtc acctgggtgt	3360
cctcatgggtg acctgcaca agatgatccg aagctcatct gtgtcaagc ccgactccag	3420
ccgcctggac aacattaaat cctgggcgtt gggggccatc gcgtgtgtgt tctgtgtgg	3480
cctcacctgg gctttcggcc tctcttcat caacaaggag tcgggtgtca tggcctatct	3540
cttcaccacc ttcaacgctt tcagggggtt ctcatcttc gtctttcact gcgccttaca	3600
gaagaagggtg cacaaggagt acagcaagtg cctgcgtcac tctactgtt gcatccgttc	3660
cccacccggg ggcactcacg gatccctcaa gacctcagcc atgcgaagca acacccgcta	3720
ctacacaggg acctagagcc gaattcggag gatgtggaat gacctgtga ggaaacagac	3780
ggagtctctt ttcatggcgg gtgacatcaa cagcaccccc acctgaacc gaggtagcat	3840
ggggaaccac ctgtgacca acccgtgtt gcagccccgt gggggcacca gtccctacaa	3900
cacctcatc gccaggtcag tgggttcaa tccctctctg cccctgtct tcaactcccc	3960
aggagctac cgggaacca agcaccctt gggaggccgg gaagcctgtg gcatggacac	4020
cctgcccctg aacggcaact tcaataacag ttactccttg cgaagtgggg atttccctcc	4080
cggggatggg ggccctgagc cggcccgagg ccggaacctg gccgatgcgg cggcctttga	4140

gaagatgatc atctcagagc tgggtgcacaa caacctgcgg gggagcagca gcgcggccaa	4200
gggcccctcca ccgcctgagc cccctgtgcc acctgtgcc gggggcgggg gcgaggaaga	4260
ggcgggcggg cccgggggtg ctgaccgggc cgagattgaa cttctctata aggccctgga	4320
ggagcctctg ctgctgcccc gggcccagtc ggtgctgtac cagagcgatc tggacgagtc	4380
ggagagctgc acggccgagg acggcgccac cagccggccc ctctcctccc ctctggccg	4440
ggactccctc tatgccagcg gggccaaact gcgggactca cctcctacc cggacagcag	4500
ccctgagggg ccagtgagg ccctgcccc accccctccc gcaccccccg gccccccga	4560
aatctactac acctcgcgcc cgccagccct ggtggcccgg aatccctgc agggctacta	4620
ccaggtgcgg cgtcctagcc acgagggcta cctggcagcc ccaggccttg aggggccagg	4680
gcccgatggg gacgggcaga tgcagctggt caccagtctc tgagggcacc tcatggacca	4740
ggggctggtg gcccaggcca gggagggaac cctgggcagg gctctggtgg gagagggaga	4800
cagatggagg cagtggctgg tgggccaact tctccaggtg cccctcagcc atgggcccta	4860
cagtccctc aggggactct aacctggggg cctgaggtgc cagggttcac agacagggtt	4920
tcccaccagc cacacgcacc agctctattt gggggaagtg tagtgaggag gagcccagag	4980
gacccagggg gagtgaggag ggagaacttg gaagggtgca gccacttcc agactctccc	5040
ctctcccacc cttctaccct gtgaaggga atgagggtt tagtttctg ggcagggagg	5100
ggcagcttct gaggttgcca aaggccccca ctggatggaa cctgttagct gctcctctcc	5160
gcagccagaa atgctgcgg ctgcaccag agggagcagt gaggcaggac agatggacag	5220
gttctcctg cgtgtaatt ccctgctccc tggagactgg gaaaaggccg cagggcaggg	5280
ggactgggcg gtggtggctg gtggtttaaa ggttgaactt tctctgaagc tcctttcccc	5340
ttgctcttgg tcctgcccc gcaagcaaac ctgccccctc tgctccag tgcacccaat	5400
gacccctcc cttggggcga ctctgatga agcacaactc cccgcagggc cccagccca	5460
caggggtggc catatttggg cagttcccag tcctgtgggc tcggctatct ggggagcaga	5520
ttttgggtct ggatctccct ggggagtggt tcctgggctt ggatctttcc ctagggggcc	5580
ctcttactcc ttctctctc ctctccttc ccattgctg taaatatttc aacgaaatgg	5640
aaaagaaaa aaaaaagac	5659